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REMARKS/ARGUMENTSClaim Rejections – 35 U.S.C. 101

In paragraph 2 of the Detailed Action under the heading “Claim Rejections – 35 U.S.C. 101”, the Examiner has rejected claims 38 to 41 under 35 U.S.C. 101 as being directed to non-statutory subject matter. Claim 38 is directed to a data frame and recites:

“a transport overhead; and

a Synchronous Payload Envelope (SPE), the SPE comprising a path overhead and a payload;

wherein protection switching data is inserted within the path overhead”.

In rejecting claim 38 the Examiner states “‘Structure’ and ‘material’ indicate tangible physical things made of matter, not energy. “[a]A data frame comprising: a transport overhead; and a Synchronous Payload Envelope (SPE), the SPE comprising a path overhead and a payload” and “a data frame...” do not fit within the type of subject matter that was intended to be patented. If the “a data frame comprising; a transport overhead; and a Synchronous Payload Envelope (SPE), the SPE comprising a path overhead and a payload” and “a data frame...” are interpreted as an abstract arrangement “to be” transmitted, rather than a physical signal in transit between a transmitter and a receiver” the signal would not fit into any of the four statutory categories because it has no physical existence”. With respect, claim 38 explicitly recites “protection switching data is inserted within the path overhead”; however, the Examiner has not even considered this claim feature. Applicant submits that since protection switching data is inserted within the path overhead, the data frame in claim 38 is indeed a physical entity and not an abstract arrangement. In particular, given that protection switching data is inserted within the path overhead, claim 38 requires specific structural elements and therefore cannot simply be regarded as an abstract arrangement (*in re LOWRY*). Claims 39 to 41 depend on claim 38 and should be allowed for the same reasons.

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The Examiner is respectfully requested to withdraw the 35 U.S.C. 101 rejection of claims 38 to 41.

Claim Rejections - 35 U.S.C. 102

In paragraph 2 of the Detailed Action under the heading "Claim Rejections – 35 U.S.C. 102", the Examiner has rejected claims 1, 4 to 9, 12 to 17, 20, 21, 24 to 27, 30, and 33 to 37 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,282,170 (Bentall, et al.). Given below is a brief description of the present invention followed by a detailed discussion on how claims 4 to 8, 12 to 17, 20, 24 to 25, 27, 30, and 33 to 37 are patentable over the Bentall, et al. reference.

The Present Invention

The invention relates generally to optical communications and, in particular, to apparatus and methods used for protection of optical communications. With reference to Figure 6 of the present application, in an exemplary embodiment the network element 100 has a plurality of ports P1, P2, P3 including first and second ports P1, P2 arranged to be coupled to Optical Carrier (OC) links within a working path. A switch fabric 136 is connected to the plurality of ports P1, P2, P3 and configured to couple the first and second ports P1, P2 such as data traffic received on one of the first and second ports P1, P2 is output on the other. A control unit 137 is connected to the switch fabric 136 and operates to monitor for failure within the working path. If a failure is detected in the working path the control unit 137 determines protection switching data and inserts the protections switching data within the data traffic being output from at least one of the first and second ports. In the exemplary embodiment of Figure 6, the protection path runs through network element 104 between network elements 100, 102 and the protection switching data is used by network elements 104, 102 to configure the protection path.

Claims 1, 9, 21, and 26

Claims 1, 9, 21, and 26 have been cancelled without prejudice. Please be advised that by cancelling these claims Applicant does not concede that the Examiner's views on the patentability of these claims is correct. Claims 1, 9, 21, and 26 have been cancelled to expedite

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allowance; however, the Applicant reserves the right to prosecute claims 1, 9, 21, and 26 in a continuation application.

Claims 4 to 8, 12 to 15, 24, 25, 27, 30, and 33 to 35

Among other claims, the Examiner has indicated in paragraph 4 of the Detailed Action that claims 2, 10, and 22 would be allowable if re-written in independent form. These claims have been re-written in independent form. Each one of claims 4, 5, 7, 8, 12, 14, 15, 24, 25, 27, 30, and 33 to 35 has been amended to depend on one of independent claims 2, 10, and 22 and should be allowed. Claims 6 and 13 depend indirectly on claims 2 and 10, respectively, and should also be allowed.

The Examiner is respectfully requested to withdraw the 35 U.S.C. 102(e) rejection of claims 4 to 8, 12 to 15, 24, 25, 27, 30, and 33 to 35.

Claim 16

Claim 16 is directed to a method for establishing an optical communication network of network elements and Optical Carrier (OC) links, and has been amended to recite:

“inserting protection entries into tables within network elements that can detect failures within the working path, the protection entries comprising protection switching data that indicates switch fabric modifications necessary to configure the protection path between the first network element and the second network element”.

The Examiner has referred to Figure 9; column 7, lines 66 to 67; and column 8, lines 1 to 5 of the Bentall *et al.* reference as disclosure for this claim feature. With respect, the Bentall *et al.* reference discloses methods of restoring a route set-up in a network and nodes arranged for use in such methods. In particular, the Bentall *et al.* reference discloses an adaptive method for restoring a route having a failure. In this adaptive method, alternative routes are ascertained on a local basis to avoid the need for pre-planning (see column 5, lines 51 to 53). In particular, the method described in the Bentall *et al.* reference is one in which an alternate path is selected only after the link fails (see column 7, line 59 to column 8, line 22). Claim 16 recites to

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“protection switching data,” and Applicant notes that protection switching has nothing to do with the adaptive method of the Bentall *et al.* reference. In particular, in protection switching an alternate path referred to as a protection path is pre-assigned and when a failure occurs data traffic is transmitted to the predefined protection path. On the other hand, in the adaptive methods of the Bentall *et al.* reference there is no pre-assigned alternate path and an alternate path is only obtained after failure. As such, the Bentall *et al.* reference has nothing to do with protection switching and therefore does not disclose “protection entries comprising protection switching data that indicates switch fabric modifications necessary to configure the protection path”.

Thus, not all of the claim features of claim 16 are disclosed in the Bentall *et al.* reference.

The Examiner is respectfully requested to withdraw the 35 U.S.C. 102(e) rejection of claim 16.

Some amendments have been made to claim 16; however, Applicant submits that none of these amendments have been made to overcome any prior art cited by the Examiner. In particular, amendments have been made to clarify the nature of the invention as exemplified for example in an embodiment found in Figures 10A to 10D and Applicant emphasizes that these amendments are not needed to overcome the current rejection.

In particular, one of the amendments made includes replacing the expression “routing table” with “table”. This amendment has been made to clarify that the scope of this claim should not be limited to a conventional routing table used for layer II IP (Internet Protocol) traffic in data routing. In particular, the table described in the present application is described as a table that is looked-up and is not described as a conventional routing table. (See for example page 22, lines 8 to 11; page 23, lines 19 to 29 (step 145); page 25, line 29 to page 26, line 1; and page 25, lines 11 to 14 of the present application for example). By replacing the expression “routing table” with “table”, claim 16 provides a scope of protection which was intended as clearly indicated in the description. A similar amendment has been made to claims 4, 13, 24, 27, and 28 for the same reasons.

Claim 16 has also been amended to recite:

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"at least one path of the working path and the at least one protection path comprising a network element other than the first path-terminating network element and the second path-terminating network element".

Support for this claim feature is found on page 28, line 27 to page 29, line 11; Figures 6, 8A, 9, and 10A to 10D.

Claims 17 and 20

Claims 17 and 20 depend on claim 16 and should be allowed for the same reasons as discussed above with reference to claim 16. The Examiner is respectfully requested to withdraw the 35 U.S.C. 102(e) rejection of claims 17 and 20.

Claims 36 and 37

Claims 36 and 37 are each directed to a network element. These claims have been amended to recite additional features similar to the additional features of allowable original claim 2, and should be allowed for the same reasons that claim 2 is allowable. Support for the additional features is found on page 17, line 1 to page 19, line 2; and page 21, line 26 to page 24, line 8.

The Examiner is respectfully requested to withdraw the 35 U.S.C. 102(e) rejection of claims 36 and 37.

In paragraph 3 of the Detailed Action, the Examiner has rejected claims 38 to 41 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,636,529 (Goodman, et al.). Given below is a discussion on how claims 38 to 41 are patentable over the Goodman et al. reference.

Claim 38

Claim 38 is directed to a data frame and recites:

"wherein protection switching data is inserted within the path overhead".

The Examiner has referred to column 6, lines 26 to 27 of the Goodman et al. reference as

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disclosure for this claim feature. With respect, in this passage there is no disclosure of any protection switching data being inserted within a path overhead.

Thus, not all of the claim features of claim 38 are disclosed in the Goodman et al. reference.

The Examiner is respectfully requested to withdraw the 35 U.S.C. 102(e) rejection of claim 38.

Claims 39 to 41

Claims 39 to 41 depend on claim 38 and should be allowed for the same reasons as discussed above with reference to claim 38. Furthermore, the Examiner has not addressed any of the additional features recited in these claims. The Examiner is respectfully requested to withdraw the 35 U.S.C. 102(e) rejection of claims 39 to 41.

In paragraph 4 of the Detailed Action, the Examiner has indicated that claims 2, 3, 10, 11, 18, 19, 22, 23, 28, 29, 31, and 32 would be allowable if re-written in independent form. As discussed above, claims 2, 10, and 22 have been re-written in independent form. Furthermore, claims 28, 31, and 32 have also been re-written in independent form. Each one of claims 3, 11, 18, 19, 23, and 29 depends directly or indirectly on one of claims 2, 10, 22, and 28 and should be allowed.

New claims 42 to 57 have been added.

In particular, new claims 42, 43, and 45 depend on claims 2, 10, and 28, respectively, and support for these claims is given on page 25, line 25 to page 27, line 16.

New claim 44 depends on claim 16 and support for this claim is found in Figures 10A to 10D for example.

Claims 46 and 47 depend on claim 28 and support for these claims is found on page 20, line 13 to page 22, line 7; and Figures 4, 6, 8A, 9, 10A to 10D.

Claims 48 and 49 depend on claim 46 and support for these claims is found on page 29,

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line 12 to page 33, line 21.

Claims 50 to 52 each depend on one of claims 16 and 18 and support for these claims is found on page 25, line 25 to page 27, line 26; and page 36, line 3 to page 37, line 14.

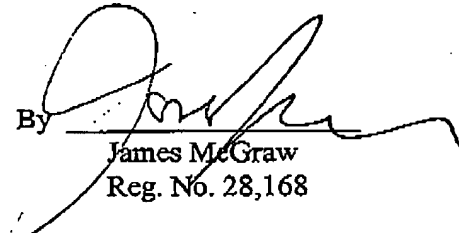
Each one of claims 53 to 57 depends directly or indirectly on claim 28 and support for these claims is found on pages 28, line to page 36, line 2.

In view of the forgoing, early favorable consideration of this application is earnestly solicited.

Respectfully submitted,

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